ACC1200: Week 12: Financial Statement Analysis

FUNDAMENTAL ANALYSIS

Fundamental analysis refers to analysing many aspects of an entity to assess the entity.

Fundamental analysis involves reviewing the state of the industry in which the entity operates, as well as the entity's financial statements, its management and governance, and its competitive positioning.

While fundamental analysis is conducted on historical data and current information, the purpose of the analysis is to make predictions about the entity's future.

One aspect of fundamental analysis is financial statement analysis.

FINANCIAL STATEMENT ANALYSIS

Viewing an entity's financial statements in absolute dollars provides useful and immediate information for decision making.

However, changes in dollar values can be difficult to gauge in terms of significance, so it is vital to undertake a more comprehensive analysis.

Financial statement uses the reported financial numbers to form opinions about the entity's financial performance and position.

It involves using ratios to make a comparison of one item in a financial statement relative to another item in a financial statement. Sometimes both items appear in the same financial statement, while other times they do not.

Ratios can be calculated based on different aspects of a business and can assess: profitability, efficiency, liquidity, capital structure and marketing performance.

ANALYTICAL METHODS

Horizontal analysis: compares the reported numbers in the current period with the equivalent numbers for a previous period, usually the immediate preceding period.

Dollar change equals:

Current period's number
less Previous period's number

The percentage change is calculated as shown in the following equation:

$$\frac{\text{Current period's number } \textit{less} \text{ Previous period's number}}{\text{Previous period's number}} \times 100$$

Trend analysis: tries to predict the future direction of various items on the basis of the direction of the items in the past.

To calculate a trend, at least three years of data are required.

- *Step 1:* Set a year as the base year, assigning it a commencing index value of 100.
- *Step 2:* Divide the following year's revenue by the base year revenue, and express this an index by multiplying the answer by 100,
- *Step 3:* Divide the year after that (third year) by the base year revenue, and express this as an index by multiplying the answer by 100.
- *Step 4:* Each subsequent year's sale revenue is divided by the base year's sale revenue and expressed as an index by multiplying the answer by 100.

Vertical analysis: compares items in a financial statement to an anchor item in the same statement.

The anchor item in the balance sheet is total assets; in the income statement it is revenue.

All asset, liability and equity items are expressed as a percentage of total assets, and all income and expense items are expressed as a percentage of revenue.

RATIO ANALYSIS

A ratio is simply a comparison of one item in a financial statement relative to another item in a financial statement – one item is divided by another to create the ratio.

Ratio analysis: examines the relationship between two quantitative amounts with the aim of expressing the relationship in ratio or percentage form.

The amounts compared do not necessarily have to be in the same statement, because it is often meaningful to compare items in the income statement or statement of cash flows to those in the balance sheet.

However, comparisons between these statements is not always straightforward, because the income statement and statement of cash flows involve flow items that are generated over a period of time, whereas the balance sheet reports stock items at a point in time.

As a result, when calculating ratios involving a comparison of a 'stock' and a 'flow' item, the average of the 'stock' item during the year is often used instead of the year-end figure.

Ratio analysis is a three-step process.

- *Step 1:* Calculate a meaningful ratio by expressing the dollar amount of an item in a financial statement by the dollar amount of another item in a financial statement.
- *Step 2:* Compare the ratio with a benchmark.
- *Step 3:* Interpret the ratio and seek to explain why it differs from previous years, from comparative entities or from industry averages.

BENCHMARKS

A ratio is of limited usefulness unless it is compared to a relevant benchmark.

Comparing the ratio with a benchmark enables the favourableness or otherwise of the ratio to be assessed.

The various comparisons that can be made include:

- A comparison of the entity's ratios over time to identify trends. This permits users to assess the stability and/or directional changes in the ratios over time.
- A comparison of the entity's ratios with those of other entities operating in the same industry, referred to as intra-industry analysis.
- A comparison of the entity's ratios with the industry averages. An industry norm is a relevant benchmark that enables a user to assess a particular entity's return and risk relative to its competitors, to determine if it is outperforming or lagging behind its peers.
- A comparison of the entity's ratios with those of entities operating in different industries or with the norms of other industries, referred to as inter-industry analysis.
- A comparison of the entity's ratios with arbitrary standards. It is not possible to specify what a ratio should be, but users operate on rules of thumb that serve as crude points of initial assessment.

RATIO ANALYSIS CATEGORIES AND THEIR RATIOS

Profitability ratios: measure of the profit relative to the resources available to generate the profit.

- Profit margin
- Gross profit margin
- Return on Equity (ROE)
- Return on Assets (ROA)
- Cash flow to sales

Efficiency ratios: measure of sales generated per dollar invested in assets.

- Asset turnover ratio
- Days in inventory
- Days in debtors
- Times inventory turnover
- Times debtors turnover

Liquidity ratios: measure of the short-term ability of the entity to pay its maturing obligations and to meet unexpected needs for cash.

- Current ratio
- Quick ratio
- Cash flow ratio

Capital structure ratios: measures the long-term stability and financing decisions of management.

- Equity ratio
- Debt coverage ratio
- Debt to equity
- Interest coverage ratio
- Debt ratio

Market performance ratios: ratios that generally relate the entity's financial numbers to the entity's share price.

- Earnings per share (EPS)
- Payout ratio
- Dividend per share (DPS)
- Price earnings ratio (PER)

(ASSET) EFFICIENCY ANALYSIS

Looks at ratios that assist in judging an entity's efficiency in using its assets.

Asset efficiency ratios: measure the effectiveness of an entity in generating sales revenue due to investments in current and non-current assets.

A large component of an entity's investments in assets that requires significant management is inventory and accounts receivable.

Asset turnover ratio

Asset turnover ratio: measures the ability of management to use assets to generate sales (revenue). Does not consider expenses.

Asset turnover ratio

$$\frac{\text{sales revenue}}{\text{Average total assets}} = x \text{ times}$$

- For example, an asset turnover ratio of 3.06 times indicates that for every $1 of assets employed, the business is generating sales revenue of $3.06 in the period.

Days inventory and days debtor ratios

Days inventory: indicates how long on average it takes to sell inventory.

Helps to forecast liquidity of inventory.

Days inventory

$$\frac{\text{Average inventory}}{\text{cost of sales}} \times 365 = x \text{ days}$$

The level of this ratio that is considered good or bad, can depend on the industry that the business is operating in (i.e. perishable goods (flowers) versus the luxury car business)).

Days debtor: indicates how long on average it is taking for debtors to pay.

Helps to forecast liquidity of receivables.

Days debtors

$$\frac{\text{Average trade debtors}}{\text{sales revenue}} \times 365 \text{ days} = x \text{ days}$$

For days debtors, quick

However, this can also be linked to the amount of days credit the business has offered to its customers.

Management can improve upon poor days debtors results by potentially offering a discount for customers who pay on time or a fee for those who pay late.

Times inventory turnover and times debtor turnover

These two ratios when converted to times per year become turnovers.

Times inventory turnover: indicates the number of times on average inventory is sold out in the period.

Times inventory turnover

$$\frac{\text{cost of sales}}{\text{Average inventory}} = x \text{ times}$$

Times debtors turnover: indicates the number of times on average debtors are turned over in the period.

Times debtors turnover

$$\frac{\text{sales revenue}}{\text{Average trade debtors}} = x \text{ times}$$

The **higher** the times turnover ratios, the more efficient an entity would appear to be in converting inventory and accounts receivable to cash.

LIQUIDITY ANALYSIS

An entity's inability to pay its debts when they fall due can result in creditors taking legal action against the entity to recover their monies.

The survival of the entity therefore depends on its ability to pay its debts when they fall due.

This ability to discharge short-term cash flow obligations is referred to as an entity's **liquidity**.

As liquidity is a measure of events over the short term, the ratios concentrate on an entity's current assets and current liabilities.

The excess of current assets and current liabilities is referred to as an entity's **working capital**.

An entity must have sufficient working capital to satisfy its short-term requirements and obligations.

However, excess working capital is undesirable because the funds could be invested in other assets that would generate higher returns.

Current ratio

Current ratio: indicates the ability of the business to pay off its current liabilities with its current assets.

Current ratio

$$\frac{\text{Current assets}}{\text{Current liabilities}} = x \text{ times}$$

It indicates whether the level of an entity's current assets is sufficient to pay its current obligations.

- For example, a current ratio of 3.25:1 indicates that the business has $3.25 of current assets to cover every $1 of current liabilities.

It is undesirable to have a ratio that is too low, as this suggests that the entity will have difficulty in meeting its short-term obligations.

However, a high current ratio is not necessarily good, as it could be due to excess investments in unprofitable assets — cash, receivables or inventory.

When assessing the current ratio, an arbitrary rule of thumb is that it should be around $1.50 of current assets for every $1 of current liabilities.

Quick ratio

Quick ratio: looks at the ability of the business to cover its current liabilities with its most liquid current assets only Quick Ration

$$\frac{\text{Current assets} - \text{inventory}}{\text{Current liabilities}} = x \text{ times}$$

It provides a more accurate measure of the ability of an entity to pay current liabilities as it excludes a current asset (inventory) that may not be able to be converted to cash quickly.

The arbitrary benchmark ratio for the quick ratio is around $0.80 of current assets (excluding inventory) for every $1 of current liabilities.

Cash flow ratio

Cash flow ratio: indicates the business' ability to cover current obligations from operating activities cash flows. Cash flow ratio (liquidity)

$$\frac{\text{Net cash flows from operating activities}}{\text{Current liabilities}} = x \text{ times}$$

The higher the ratio, the better the position of the entity to meet its obligations.

CAPITAL STRUCTURE ANALYSIS

An entity's **capital structure** is the proportion of debt financing relative to equity financing, and reflects the entity's financing decision.

Capital structure ratios (also referred to as gearing ratios) depict the proportion of debt to equity funding, and are useful when assessing an entity's long-term viability.

Achieving a balance between debt and equity funding affects the entity's ROE.

The use of debt can be advantageous, as debt funding is cheaper than equity funding.

The lower cost of debt reflects:

- The lower returns required by debt holders, given the lower risk borne by debt holders relative to equity holders.
- The tax deductibility of interest expense.

However, excessive debt levels can be burdensome for an entity if the cost of servicing the debt exceeds the return generated by investments in assets (i.e. the cost of debt exceeds the return on assets), and this will depress the return on equity.

If the debt is being used profitably, and the return on assets financed with debt exceeds the cost of borrowing, then the benefit accrues to the owners in the form of higher returns on equity.

Debt to equity ratio, debt ratio and equity ratio

These ratios are all indicators of the amount of debt or equity finance the business has.

Debt to equity ratio: allows users to gauge the level of liabilities compared to owner's equity.

Debt to equity ratio

$$\frac{\text{Total liabilities}}{\text{Total equity}} \times 100 = x\%$$

If this ratio exceeds 100 per cent, then the entity is more reliant on debt funding than equity funding.

Debt ratio: allows users to gauge what proportion of assets have been financed by debt.

- Higher debt is more risky.

Debt ratio

$$\frac{\text{Total liabilities}}{\text{Total assets}} \times 100 = x\%$$

If this exceeds 50 per cent, then the entity finances its investments in assets by relying more on debt relative to equity.

If the debt ratio is less than 50 per cent, then the entity finances more of its assets with equity than with debt.

Equity ratio: allows users to gauge what proportion of assets have been funded by owners.

Equity ratio

$$\frac{\text{Total equity}}{\text{Total assets}} \times 100 = x\%$$

If this ratio is less than 50 per cent, then the entity is more reliant on debt funding than equity funding.

Debt coverage ratio

Debt coverage ratio: links the cash flows from operating activity with long term debt.

Debt coverage ratio

$$\frac{\text{Non-current liabilities}}{\text{Net cash flows from operating activities}} = x \text{ times}$$

It is also a measure of an entity's ability to survive in the longer term and remain solvent, as it indicates how long it will take to repay the existing long-term debt commitments at the current operating level.

Interest servicing ratios

Interest coverage ratio: indicates the number of times a business can cover its interest expense from the current period's profits.

Interest coverage ratio

$$\frac{\text{EBIT}}{\text{Net finance costs}} = x \text{ times}$$

- **Example question**

Apply it: analysis of liquidity, asset efficiency, capital structure

Riewoldt Co is a medium sized retailer. For each of the ratios listed below, explain briefly what the ratio means and comment on the company's performance based on each individual ratio over the

	2014	2015	2016
Current Ratio	$3.8 : $1	$3.4 : $1	$2.8 : $1
Quick Ratio	$1.6 : $1	$1.5 : $1	$1.1 : $1
Days Debtors Ratio	42 days	39 days	36 days
Days Inventory Ratio	15 days	15 days	13 days
Debt Ratio	0.42	0.48	0.65

Suggested answer:

Current ratio – indicates that the company has $2.80 of current assets to pay off each $1 of current liabilities in 2016. It has unfortunately declined over the three years.

Quick ratio – recognises the inability to sell stock quickly, so provides a better measure of the ability to cover current liabilities. It has also deteriorated, with $1.10 of current assets excluding inventory on hand in 2016.

Problem: these are both static measures, based on the balance sheet at one point in time. They provide no information about the timing of cash inflows or when cash outflows need to be paid. It would be helpful to have other data such as a cash budget to assist.

Prima facie (on the surface), ceteris paribus (all things being equal), the bigger the better (less risk). In this case, both ratios are falling indicating a likely deterioration in liquidity.

Days debtors ratio – indicates the average time it takes to receive payment from credit customers. Depends on the credit terms offered to customers. Prompt payment is always preferred. Debtors collection improved by six days over the three year period.

Days inventory ratio – indicates the average time it takes to sell inventory. Depends on what the company sells. Faster selling time is preferred to increase liquidity and profitability (more sales). Inventory turnover did not change initially, but subsequently improved by two days in 2016.

These ratios provide an overall indicator of timing (but don't tell you *when*).

In this case both ratios show an apparent improvement in liquidity.

PROFITABILITY ANALYSIS

Most companies exist to generate a profit and most shareholders invest in an effort to increase their wealth.

Profitability ratios can assist in making important decisions regarding an investment.

They can be viewed form two different perspectives:

- From the perspective of an owner (shareholder)
- From the perspective of the entity, to assess management's effectiveness.

Profitability – from an owner's perspective

Most shareholders invest in companies in an effort to increase their wealth through dividends and capital growth (increase in share price).

The success (profitability) of the entity during a period affects many things, including dividend payouts and share prices.

A starting point to assess the profitability of an investment includes calculations related to the:

- Earnings per share
- Dividend payout
- Price-earnings ratio
- Payout ratio

MARKET PERFORMANCE RATIOS

These ratios are applicable to companies listed on organised securities exchanges, as the rations relate reported numbers to the number of shares on issue or the market price of the share.

Earnings per share (EPS)

Earnings per share: a measure of the profit generated for each ordinary share on issue.

Earnings per share

$$\frac{\text{Profit available to ordinary shareholders}}{\text{Weighted number of ordinary shares on issue}} = x \text{ cents/share}$$

Converts the absolute dollar amount of operating profit to a per share basis, indicating the profit earned per share issued.

Companies seek to achieve growth in earnings per share, as this signals to the market the company's earning ability.

It is important to realise this is not necessarily the amount shareholders will receive from their investment.

The earnings per share is often disclosed in daily newspapers and at the bottom of the entity's income statement.

Dividends per share

Dividends per share: indicates the distribution of the company's profits in the reporting period via dividends, expressed relative to the number of ordinary shares on issue.

Dividend per share

$$\frac{\text{Dividends paid or provided to ordinary shareholders in the current reporting period}}{\text{Weighted number of ordinary shares on issue}} = x \text{ cents/share}$$